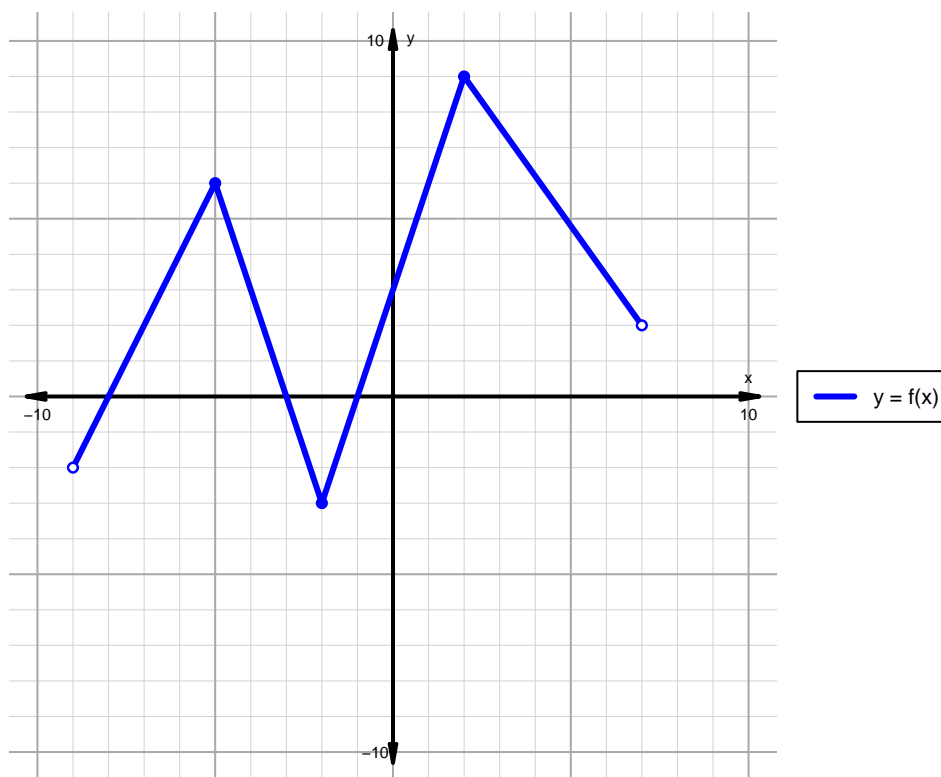


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 20)**

1. The function  $f$  is graphed below.

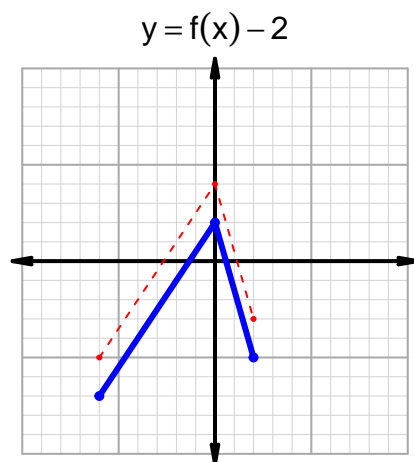
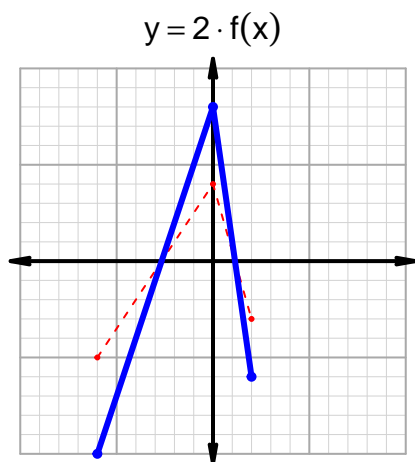
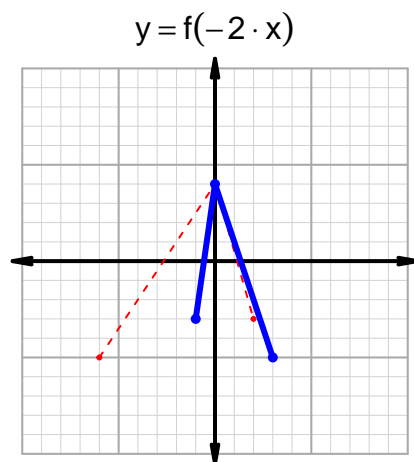
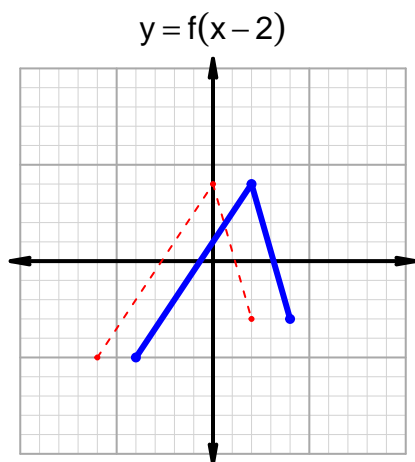


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-8, -3) \cup (-1, 7)$
Negative	$(-9, -8) \cup (-3, -1)$
Increasing	$(-9, -5) \cup (-2, 2)$
Decreasing	$(-5, -2) \cup (2, 7)$
Domain	$(-9, 7)$
Range	$(-3, 9)$

## Intervals, Transformations, and Slope Solution (version 20)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 22$  and  $x_2 = 26$ . Express your answer as a reduced fraction.

$x$	$g(x)$
22	51
26	69
51	26
69	22

$$\frac{g(26) - g(22)}{26 - 22} = \frac{69 - 51}{26 - 22} = \frac{18}{4}$$

The greatest common factor of 18 and 4 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{9}{2}$$